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A CRUISE ALONG THE NORTHERN COAST OF AFRICA.

BY LIEUT.-COMMANDER HENRY H. GORRINGE, U. S. NAVY.

Observe how small is the distance that separates the north coast of Africa, between Tunis and Alexandria, from the opposite coast of Europe and its outlying islands. It is only seventy-five miles from the west end of Sicily to Cape Bon, and less than 200 from the beautiful city of Palermo to the squalid capital of Tunis. One night's run of an Atlantic steamer would enable you to go from the Opera House in Malta, filled with the fashionable society of a British garrison, to the magnificent ruins of the amphitheatre of the ancient Leptis Magna—deserted, save by the owls and jackals. The contrast between the two regions and their inhabitants is very striking and remarkable in view of their close proximity. The waters of the Mediterranean, that separate them, form an impassable barrier between the destructive influences of the great Saharan desert and the civilization of Southern Europe. The Sahara has caused the gradual desiccation and depopulation of the narrow, fertile strip that once separated it from the Mediterranean, which has been gradually growing more narrow, until to-day it forms a part of the desert. The scanty population remaining is now gathered in a few oases, widely separated by arid plains, over which lie scattered numerous remains of ancient cities, rapidly disappearing under the accumulations of sand.

My opportunities for inland exploration were very limited, chiefly owing to the short time allotted to the cruise. After visiting the site of ancient Carthage, of which nothing remains above ground but its magnificent aqueduct and cisterns, we cruised along the eastern coast of the ancient Zeugitana and Byzacium, now the regency of Tunis, and anchored in the Gulf of Gabes, the ancient Syrtis Minor. From this point I made an excursion to the proposed French "Inland Sea."

Several explorers, who had made rapid journeys through the southern part of Tunis in the beginning of this century and within ten years, had reported that a considerable part of the great valley that lies between the two easternmost spurs of the Atlas chain, and

known as the region of the *chotts*, was below the sea level. Without instruments of precision to test the levels, everything in its appearance justified them in that belief. Standing on any eminence and looking over the vast basin, you would feel confident, not only that it is below sea-level, but that it is actually flooded. The contrast between the surface of what looks like water and the adjacent plain is very great. The one is slate-colored, smooth, without visible undulations, and devoid of any form of vegetation ; a mist hangs over it, especially in morning and evening, that aids in the deception to an extent that cannot be described. The other is gently undulating, intersected by the beds of winding streams and rivers now dry, and almost covered in the Winter with tufts of grass and weeds. A few oases and occasional masses of isolated rock break the monotony of the view ; but the stillness and desolation is very oppressive, yet very fascinating.

Everything indicates that at no very distant day a chain of lakes extended through this valley from the Gulf of Gabes, a distance of 250 miles to the westward. Some explorer will probably find the bed of a river that received the eastern drainage of the Atlas Mountains and supplied the evaporation from what was once the flooded area. This is estimated at about 5,000 square miles.

Within five years several explorers have been sent by the French and Italian governments to ascertain approximately how much of this region is actually below sea-level, with a view to admitting the waters of the Mediterranean by means of a canal from the shores of the Gulf of Gabes, in order to ameliorate the climate and restore the fertility of the valley. These explorers have found that the total area actually depressed below the sea-level is about 3,000 square miles, the mean depth about eighty feet, and the least distance from the nearest depression to the Mediterranean is 102 miles.

The French explorers maintain that instead of a chain of fresh water lakes, the depressions were an estuary of the Mediterranean, and explain the desiccation of the region by the theory of an upheaval of the coast, which cut off the water supply. But an eminent French engineer, Prof. Fuchs, has shown that the geological formation of the narrow strip that separates the nearest bed of the former lakes from the sea, which is only twelve miles in width,

is such as to render that theory highly improbable. If there has been an upheaval of this part of the coast, it is an exception to the well-established fact that the north coast of Africa has been sinking in historic times instead of rising.

Opinions differ as to the feasibility of cutting a canal to flood the depressions, and as to the results of flooding them. It is conceded that the evaporation from the flooded area would be sufficient to ameliorate the climate of Southern Tunis and reclaim for cultivation a vast region now arid and uninhabited. The soil needs only water to render it unequalled in fertility. Wherever springs or wells afford a supply for irrigation an oasis is found yielding grain and fruit in abundance. The extremes of temperature, now very great, would be diminished. We observed in our camp on the desert in February, 1878, a range from 29° Fahrenheit at three in the morning to 86° at noon. Unable to lie still long enough to go to sleep after midnight for the cold, we were almost overcome by the heat of mid-day. One of the great advantages to be derived from flooding the valley would be the creation of a water way to the southern provinces of Algeria, and this accounts for the great interest shown by the French in the subject. M. de Lesseps visited the region, and a canal would probably have been commenced had his attention not been directed to Panama. Notwithstanding the fact that the route of the proposed canal passes through many miles of quicksands, in which caravans that have lost their way in crossing the *chotts* have been swallowed up, the French engineers regard it as entirely feasible. Doubtless they will find it as easy to control the quicksands of Africa as the floods of the Chagris in Central America. The estimated cost of the canal is about five hundred millions of dollars. Such an outlay would not be justifiable for flooding an area of 3,000 square miles—about one-tenth of that of Lake Superior. The world is not yet so thickly peopled as to make it necessary to provide more room. We can offer to European emigrants for some years to come arable lands at lower rates than the promoters of the French Inland Sea scheme could afford to sell land reclaimed at such a cost.

Not the least interesting recollections of my trip to the proposed Inland Sea are those of the numerous Greek and Roman ruins that were scattered along the route. Vestiges of ancient towns were

seen where now there is not a living creature. A part of our route lay along an old Roman road marked by the ruins of small forts and block-houses at short intervals. At one oasis where we rested at mid-day our guides took us to an old Roman bath, faced with marble and in excellent preservation, through which a hot spring flowed abundantly. Where the water came out of the ground at some distance from the bath, it was hot enough to scald the flesh. The spring is highly prized by the Arab inhabitants for its curative properties, and I secured a bottle of the water, intending to bring it home for analysis.

The most interesting ruin of this whole region is that of the celebrated African Coliseum of Tisdra, a day's journey from the port of Sphax, at the head of the Gabes Gulf. It is in the form of an ellipse, the greatest diameter at the base being 430 feet, and the least 370, the corresponding diameters of the arena being 240 and 180 feet. Although third in size, being smaller than that of Verona, it ranks next after that of Rome in the state of preservation and architectural effects. The structure consists of four tiers of arches and columns, having a total height of nearly 100 feet. The capitals of the columns bear a striking resemblance to those of Diocletian's Column at Alexandria, generally known as Pompey's Pillar. The gateways at each end and the upper tier of arches were nearly destroyed about one hundred and fifty years ago by the reigning Bey of Tunis to prevent the Coliseum being used as a fortress by some of the Arab tribes in revolt against his authority. The keystones of the lower tier of arches were originally decorated with sculpture, of which only a few fragments remain. Surrounding this almost indestructable monument of the power and wealth of the inhabitants of the region about twenty centuries ago, are the huts of its present inhabitants, presenting one of the most striking contrasts to be found in all Africa. I know of no better way to describe an Arab village than to compare it to a cluster of old-fashioned masonry ovens; the dwellings are without windows, and the aperture through which they are entered is only large enough to crawl into; the interiors are black and smoky, and in the dim light one sees dogs and sheep, children and donkeys, and women and men crowded together in them.

At the southern termination of the Gulf of Gabes is the Island of

Djerbah, presenting a marked contrast to the neighboring coast, which is perfectly barren, without any inhabitants, while the island is covered with trees, has an abundant supply of water, and is very thickly populated. During the Saracenic wars of the middle ages it was the scene of one of those terrible conflicts between the Moors and Spaniards that resulted in the annihilation of the latter. On the northern coast there still remain traces of a pyramid that had been built out of the skulls of the Christians as a warning to them not again to attempt the conquest of the island. One of the most interesting features of this island is its manufactures of woolen and silk fabrics, hand-made, of very fine texture and exquisite coloring.

Eastward of Djerbah not a habitation is seen until you reach Tripoli, although the remains of ancient Roman and Greek settlements are very conspicuous from the sea. Of the three cities, Sabrata, Oea and Leptis, that formed the ancient Tripolis, from which the present town derives its name, the ruins of Leptis are the most interesting. We visited them twice.

Lying scattered on the beach where we landed were numerous Cipollino marble columns, three of which were thirty feet long and four feet in diameter. They appeared to have been moved to this point for shipment. The marble is variegated in color, the green predominating, and the polished surfaces are very beautiful. There were many varieties of the granite and marble and a great number of the columns and fragments of capitals lying scattered along the route from the sea to the ancient city. Among the most striking were large masses of syenite, that must have been brought from Egypt. The diameter of one of the fragments of a column of syenite is $4\frac{1}{2}$ feet. In one spot on the west side of the old port there were thirteen columns of gray granite, evidently gathered there for removal. At another point there was a row of 11 columns of variegated green marble; only the tops were seen sticking up above the sands. This row is within the massive walls of a large edifice, which have toppled over without breaking. In many places the quays of the old port are still visible. They are lined with marble and show extraordinary care in their construction and adornment. The port is now filled up with sand, and the river that once flowed through it is now dry in Summer. No systematic excava-

tions have ever been made at Leptis, but the French and English have removed from the surface many of its most beautiful columns and interesting relics. The Church of St. Germain Des-Prés, in Paris, is adorned with some of the columns taken from Leptis; and Admiral Smyth removed many more, that are now in the Royal Gardens at Windsor. Overlooking the sea at the entrance to the ancient port are the remains of a fortress remarkable for its massive walls, constructed of blocks of granite, many of which exceed ten tons in weight. This fortress appears to have been connected with the city by a subterranean passage of very early date. No cement or mortar is used in the construction, the stones being hewn so as to fit exactly in their places at the crown of the arch. The sea now washes into the mouth of this passage and renders it very difficult to explore.

In the Augustine era Leptis was probably the most populous and prosperous city in Africa. It is described as encompassed by strong walls of masonry, pierced with magnificent gates, and ornamented by spacious porticos, portions of which still remain to prove their former splendor. The ruins of aqueducts, and reservoirs in excellent preservation, indicate that it had a large population. Its only commercial importance at this time is in the supply of millstones that it furnishes for exportation to Sphax and Sousa on the Tunisian coast. These millstones are obtained by breaking the marble and granite columns into suitable lengths. The neighboring region is, however, rapidly growing in importance, owing to the alfa or esparto grass, which grows in great abundance, and is gathered by the natives for exportation to Europe, where it is made into paper pulp. In this form it is shipped to America.

Between Leptis and Berenice is the great Syrtis, the shores of which are but little above the sea level, and are devoid of any object of especial interest. Less than a day's journey inland from the southernmost part of the gulf there is a sheet of water known as the Sulphur Lake, the bottom of which is said to contain an inexhaustible supply of pure sulphur. The gulf is resorted to during the Summer by thousands of Greek sponge fishers, who now use the regular diving apparatus, and work in depths of 180 to 200 feet. Before the adoption of the diving apparatus the average loss of life from the sharks—particularly ferocious in this vicinity—was three

a year. A fisherman told me that a shark will not come near a diver in armor. Occasionally they bite the air tube in two, with fatal results to the diver. The eastern coast of the gulf is a very narrow strip of sand separating its waters from those of extensive lagoons which yield an abundant supply of salt in the Summer season. The waves of Winter wash over the low sand and fill the lagoons, while the intense heat of the Summer evaporates the water and leaves them a solid mass of salt. Small quantities are annually gathered and piled into mounds. I measured one mound and found it 80 feet in height. These are probably the salt hills reported by the early travelers through this region. The surfaces are preserved by burning straw over them on the approach of Winter, rendering them impervious to water. By digging through these mounds you may trace the annual deposits of many centuries.

The five cities of the ancient Pentapolis were Berenice, Arsinoë, Ptolemais, Apollonia and Cyrene. Their sites are marked to-day by the remains of temples and massive walls and numerous tombs hewn out of the rocks. Berenice, at the east boundary of the Great Syrtis, has been more nearly destroyed than any of the others, for the purpose of constructing the modern town of Benghazi, and an Arab fortress that stands near its site. Blocks of marble, with Greek and Latin inscriptions, fragments of capitals and statuary, and sculptured cornices are frequently seen, upside down, built into the walls. No excavations have been made at the site of Berenice, chiefly owing to its being at this time a Moslem cemetery. Next to their harems the Mohammedans guard their cemeteries most jealously from Christian hands, and they will never consent to excavations on this site.

In the neighborhood of Benghazi the surface of the ground is frequently broken by precipitous chasms, fifty or sixty feet in depth. At the bottom of the chasm there is invariably a surface of rich soil, and also an abundant supply of moisture. The change from the arid and barren surface of the surrounding desert to these spots of luxuriant vegetation is very striking. The gardens of the Hesperides are believed to have been in the vicinity of Berenice, and many are of the opinion that these fertile spots at the bottoms of the chasms are what remains of them. In one of the chasms, about seven miles from Benghazi, is the entrance to a cave which

leads to an extensive sheet of water, believed to be identical with the river Lethe. I transported a boat across the desert on the backs of two donkeys, side by side, and launched it on the waters of this famed river, which we found clear and cool and fresh, as if constantly supplied by springs. It appears to run through a series of chambers, with very narrow passages connecting them. We observed a sensible current. The walls of the chambers are in part, at least, artificial, and on them are engraved many inscriptions. No extended exploration of this curious subterranean stream has ever been made; no one knows where it comes from or where it goes to. It would be very interesting to find out, and instructive to copy the inscriptions, some of which are believed to be in Punic characters. I can very well understand the extravagant terms in which the ancients described the Lethe. In the Spring there prevails along this coast a hot-air blast—it cannot be called a wind—that comes from the great desert further south. The air is laden with insects and fine particles of sand, and is hotter and dryer than any one who has not experienced it can conceive of. I have observed a temperature of 131° F. in the shade during one of these blasts, called by the natives *giblehs*; on one occasion I was indiscreet enough to wet my head with salt water, in my efforts to allay the intense suffering caused by necessary exertion. In a few moments my head was covered with a crust of salt, so rapid had been the evaporation. These winds rarely last through the night, and usually return each day for three or five hours. My theory in regard to the Lethe is that it was an artificial subterranean retreat from the discomforts of these hot winds for the inhabitants of the ancient city, who were certainly wealthy enough to create it, if we may judge from their works on the surface. The air in the cavern maintains a uniform temperature of about 65° , and that of the water about 55° F.

The famous fountain of Apollo, which issues from a rock at Cyrene, is similar to the Lethe, but not as large. Beechey, who explored it, states that the channel is formed entirely in the rock, from which the stream issues and runs in an irregular course for nearly a quarter of a mile into the mountain. The sides and roof of the passage are flat, where time and the action of the current—which is very strong—have not worn them away. The general height of the channel is about five feet, and its average width is

from three to four feet. Beechey says, that he observed, while exploring this passage, that the clay that had been washed down in considerable quantities by the current was occasionally plastered against the sides of the channel, and smoothed over very carefully. On this he found Greek inscriptions, some of which, from their dates, must have remained in the wet clay for more than 1,500 years. The earliest and most conspicuous dates that he copied were those of the reign of Diocletian.

The extensive ruins that mark the site of Ptolemais are very conspicuous from the sea ; among the most striking are three large Ionic columns close together and still standing amidst the débris of what was once a large temple. Beechey says that the walls of the ancient city enclose about a square mile of ground ; and within them are massive ruins abounding in fragments of statuary and sculptured slabs, many with inscriptions. Outside of the city walls are the remains of many structures—prominent among them a spacious mausoleum built by Ptolemy Euergetes Second, to whom the Romans had assigned the Cyrenaica as a kingdom after having deposed him in Egypt. Among the inscriptions copied at Ptolemais there is one in Greek on a slab built into the base of the three columns referred to, bearing the names of Cleopatra and Ptolemy Philometer, and also Arsinoe and Berenice, Egyptian sovereigns of the Ptolemaic dynasty.

The plain on which all the cities of the Pentapolis, except Cyrene, stood, is a narrow strip between the sea and a range of hills that borders the coast from Benghazi eastward to Dernah. This range rises first to an elevation of about 1,000 feet, where the surface forms a table land extending several miles inland, and then rises again to form a ridge. Cyrene stands on the table-land very picturesquely situated and difficult of approach through the narrow gorges of the mountains, the steep slopes of which form a natural defense. The hillsides are everywhere honey-combed with tombs, some of them now occupied as Arab dwellings, and many of them are unexplored. From Apolonia, the seaport, the ascent to Cyrene is through a beautiful valley, where the vegetation is still more general than anywhere else on this coast, and, aside from its associations with the past, the natural beauties of the scenery are enough to attract the tourist, if only he could get to them. But you cannot reach Cyrene without undergoing the hardships and dangers of a tedious land

journey either from Alexandria or Benghazi. The region is without commerce and almost depopulated. The wandering tribes of Arabs that pasture their herds of sheep and cattle are more vicious and fanatical than any others along this coast, and would be dangerous if they were well armed. Hundreds of steamers pass almost in sight of it weekly on the voyage from the Straits of Gibraltar to the Suez Canal, and not one ever touches at any part of this coast, because there is no commerce to attract them. The Winter climate is unsurpassed for salubrity; the temperature is equable and the air dry and exhilarating. Cyrene was, in its flourishing days, a health resort, much as the south coast of France is to-day; in addition to the climate, admirably adapted to the cure of pulmonary diseases, there was a plant, the Sylphium Cyrinaicum, the extract from which was believed to be almost unfailing in the cure of these diseases. It was not cultivated, but grew wild on the hill-slopes. By an incision in the plant or its root the juice was obtained, which Pliny recommended for every form of disease. So great was its value that the word Sylphium became synonymous with that of riches. Among the sacred gifts at Delhi was a plant of the Sylphium sent by the Lybians. In the Roman public treasury the Sylphium was preserved with the gold and silver; and Pliny mentions as a remarkable occurrence that in the year of Rome 661, about a century before Christ, thirty pounds of Sylphium were imported to Rome. Under Nero the plant became so scarce that one specimen was sent to him as a great tribute. The Sylphium no longer exists. It is supposed to have been destroyed by the natives to avoid the payment of an oppressive tax to which the country was subjected on its account by the Romans. The *Thapsia Garganica* that now abounds in the Cyrinaica is undoubtedly of the same species, for it resembles the Sylphium engraved on the ancient coins of Cyrene.

The only systematic excavations that have ever been made in the Pentapolis were carried on by two British officers in 1860 at Cyrene.

Nothing that I could say would convey to your minds more clearly than the views that will now be thrown on the screen the results of their work. And when it is remembered that there are four more cities of the Pentapolis, and as many more further east, any one of which would probably yield from its ruins an equal return, it is surprising that some efforts are not made to explore them and recover the art treasures that lie buried in the sands.

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NOTE ABOUT THE TOMBS OF CYRENE.

The most striking evidences of the former grandeur of Cyrene are the Necropoli, which consist generally of tombs hewn out of the solid rock. Many of them are still in excellent preservation. They extend for miles in every direction outside of the city walls the most remarkable are those on the western side of the city, through the ravine that leads to the port of Apolonia. The tombs cut into the faces of the hills are arranged in terraces, the rock being cut into steppes to allow of free access to them. Some of the exteriors are beautifully decorated with marble columns and ornamented with bas-reliefs, now mutilated. The fanaticism of the Mohammedan Arabs impels them to destroy everything that represents animal life in inanimate matter; this accounts for the destruction of the statuary, and the fact that it is found in fragments generally lying close together. After having broken it, they did not care to remove the fragments—indeed, they are so numerous that they could not obliterate them. A piece of statuary that is the work of a master is almost indestructible; each fragment bears its own testimony to the merits of the whole, and has its value as a means of study and elevation. When we reflect that the marble representations of the human form wrought during the period when Grecian art was at its best are the standards of to-day, and that the best work of modern times is little better than awkward and lifeless variations of these standards; and when we remember that there lie buried in the ruins of the Tripolis and Pentapolis fragments of the originals, and antique copies of many of the best works of the Greek masters—for Cyrene was a famous school of Greek art—it is inexplicable that some earnest effort is not made to recover the fragments before it is too late. There are no serious difficulties in the way. The Arabs, although hostile to Christians, are so poor and in need that they would soon learn the advantages to be derived from the spending of considerable sums in their employment. Labor for excavating would not cost over twenty cents per average day's work, and other things, such as transport and food, are correspondingly low. In my dealings with these Arabs I found no difficulty in converting their hostility to friendship.